

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing Of Claims:

Claim 1. (Original): A method of optimizing the oxidation of molybdenite concentrates comprising:

- a. forming an aqueous slurry of said molybdenite concentrates;
- b. heating said slurry to a temperature of at least about 200°C;
- c. agitating said slurry while in contact with an atmosphere containing free oxygen;
- d. oxidizing said slurry in said atmosphere at an oxygen over pressure of at least about 50 p.s.i.;
- e. regulating an amount of ferric iron concentration and excess sulfuric acid concentration during the oxidation reaction; and thereby
- f. producing a leach slurry wherein greater than about 99% of the molybdenum in said molybdenite concentrate is oxidized.

Claim 2. (Original): The method of Claim 1 wherein less than about 20% or greater than about 80% of said oxidized molybdenum is soluble.

Claim 3. (Original): The method of Claim 1 wherein said molybdenite concentrates contain copper and the copper dissolution is greater than about 99% in said leach slurry.

Claim 4. (Original): The method of Claim 1 wherein said molybdenite concentrates contain iron and the iron dissolution is about 60-90% by weight in said leach slurry.

Claim 5. (Currently Amended): The method of Claim 1 wherein the regulating step maintains said slurry in a high excess sulfuric acid level under conditions sufficient to produce lower soluble silicon levels.

Claim 6. (Previously Presented): The method of Claim 1 wherein the regulating step maintains said slurry in a high ferric iron level sufficient to accelerate the rate of oxidation.

Claim 7. (Currently Amended): The method of Claim 1 further comprising recycling a portion of said leach slurry produced in ~~step~~ step (f) back to the forming step (a).

Claim 8. (Previously Presented): The method of Claim 7 further comprising determining an approximation of the amount of soluble molybdenum in the leach slurry.

Claim 9. (Previously Presented): The method of Claim 8 wherein the determining step includes monitoring a concentrate analysis, a recycling solution analysis, and pulp density.

Claim 10. (Currently Amended): The method of Claim 1 wherein the oxygen over pressure in the oxidizing step ~~ranges for~~ ranges from about 80 to about 120 p.s.i.

Claim 11. (Original): The method of Claim 1 wherein the temperature in the heating step ranges from about 210 to about 220°C.

Claims 12-14. (Cancelled).

Claims 15-26. (Cancelled).